FULL VERSION OF PENDING CLAIMS

Claim 1 (Currently Amended): A negative ion emitting apparatus comprising:

a DC high-voltage power supply section;

at least one discharge electrode section connected to the DC high-voltage power supply section for emitting negatively charged electrons, the discharge electrode section having a proximal end and a distal end, the distal end of the discharge electrode section being exposed to air; and

at least one load resistance section arranged between said DC high-voltage power supply section and said discharge electrode section so as to restrict the flow~~ing~~ of electrons from said DC high-voltage power supply section to said discharge electrode section until a predetermined voltage is applied,

wherein the discharge electrode section is operatively connected at a proximal end to a load resistance section so that current flows from the DC high-voltage power supply section through the load resistance section to the proximal end of each discharge electrode section causing negatively charged electrons to be emitted from a distal end of the discharge electrode section into the air.

Claim 2 (Original): A negative ion emitting apparatus as defined in claim 1, wherein said DC high-voltage power supply section is connected to said load resistance section and discharge electrode section through a high-voltage wiring.

Claim 3 (Previously Presented): A negative ion emitting apparatus as defined in claim 1, wherein said discharge electrode section is constituted by a needle electrode which is formed to

be pointed at the distal end thereof with an acute angle to a longitudinal axis of the needle electrode.

Claim 4 (Previously Presented): A negative ion emitting apparatus as defined in claim 2, wherein said discharge electrode section is constituted by a needle electrode.

Claim 5 (Original): A negative ion emitting apparatus as defined in claim 1, wherein the amount of negative ions emitted is varied by varying a load resistance of said load resistance section.

Claim 6 (Original): A negative ion emitting apparatus as defined in claim 2, wherein the amount of negative ions emitted is varied by varying a load resistance of said load resistance section.

Claim 7 (Original): A negative ion emitting apparatus as defined in claim 3, wherein the amount of negative ions emitted is varied by varying a load resistance of said load resistance section.

Claim 8 (Original): A negative ion emitting apparatus as defined in claim 4, wherein the amount of negative ions emitted is varied by varying a load resistance of said load resistance section.

Claim 9 (Original): A negative ion emitting apparatus as defined in claim 1, wherein a plurality of said discharge electrode sections are arranged;

a distributor is arranged between said discharge electrode sections and said DC high-voltage power supply section and provided therein with an additional load resistance section; and

said DC high-voltage power supply section and said discharge electrode sections are connected to said distributor.

Claim 10 (Original): A negative ion emitting apparatus as defined in claim 2, wherein a plurality of said discharge electrode sections are arranged;

a distributor is arranged between said discharge electrode sections and said DC high-voltage power supply section and provided therein with an additional load resistance section; and

said DC high-voltage power supply section and said discharge electrode sections are connected to said distributor.

Claim 11 (Original): A negative ion emitting apparatus as defined in claim 3, wherein a plurality of said discharge electrode sections are arranged;

a distributor is arranged between said discharge electrode sections and said DC high-voltage power supply section and provided therein with an additional load resistance section; and

said DC high-voltage power supply section and said discharge electrode sections are connected to said distributor.

Claim 12 (Original): A negative ion emitting apparatus as defined in claim 4, wherein a plurality of said discharge electrode sections are arranged;

a distributor is arranged between said discharge electrode sections and said DC high-voltage power supply section and provided therein with an additional load resistance section; and

said DC high-voltage power supply section and said discharge electrode sections are connected to said distributor.

Claim 13 (Original): A negative ion emitting apparatus as defined in claim 5, wherein a plurality of said discharge electrode sections are arranged;

a distributor is arranged between said discharge electrode sections and said DC high-voltage power supply section and provided therein with an additional load resistance section; and

said DC high-voltage power supply section and said discharge electrode sections are connected to said distributor.

Claim 14 (Original): A negative ion emitting apparatus as defined in claim 6, wherein a plurality of said discharge electrode sections are arranged;

a distributor is arranged between said discharge electrode sections and said DC high-voltage power supply section and provided therein with an additional load resistance section; and

said DC high-voltage power supply section and said discharge electrode sections are connected to said distributor.

Claim 15 (Original): A negative ion emitting apparatus as defined in claim 7, wherein a plurality of said discharge electrode sections are arranged;

a distributor is arranged between said discharge electrode sections and said DC high-voltage power supply section and provided therein with an additional load resistance section; and

said DC high-voltage power supply section and said discharge electrode sections are connected to said distributor.

Claim 16 (Original): A negative ion emitting apparatus as defined in claim 8, wherein a plurality of said discharge electrode sections are arranged;

a distributor is arranged between said discharge electrode sections and said DC high-voltage power supply section and provided therein with an additional load resistance section; and

said DC high-voltage power supply section and said discharge electrode sections are connected to said distributor.

Claim 17 (Currently Amended): A negative ion emitting method comprising the step of connecting at least one load resistance section between a DC high-voltage power supply section and at least one discharge electrode section having a proximal end and a distal end, the distal end being exposed to air, [[to]] the load resistance section thereby restricting the flow~~ing~~ of electrons from said DC high-voltage power supply section to said discharge electrode section for enabling an emission of negative ions from said discharge electrode section, wherein said discharge electrode section is operatively connected at a proximal end to said load resistance section so that current flows from said DC high-voltage power supply section through said load resistance section to the proximal end of said discharge electrode section causing negatively charged electrons to be emitted from the distal end of said discharge electrode section into the air.

Claim 18 (Previously Presented): A negative ion emitting apparatus as in claim 3 wherein the load resistance section includes carbon having a resistance of 20 Ω and the DC high-voltage power supply section to provide 5kV.

Claim 19 (Previously Presented): A negative ion emitting apparatus as in Claim 9 wherein the load resistance section is carbon in each of said discharge electrode sections and the additional load resistance section in the distributor is carbon.

Claim 20 (Previously Presented): A negative ion emitting apparatus as in claim 19 wherein the respective carbon sections have a resistance of 20 Ω and the DC high-voltage power supply section provides 5kV.

Claim 21 (Currently Amended): A negative ion emitting apparatus comprising:

a DC high-voltage power supply section;

a first needle point metal electrode for emitting negative ions, a predetermined portion of the first needle point metal electrode being exposed to air; and

a first load resistance section including carbon of approximately 20 Ω connecting the DC high-voltage power supply section to limit the first needle point metal electrode from emitting negative ions until a predetermined voltage is applied by the DC high-voltage power supply section, whereby at the predetermined voltage the negative ions are forcibly emitted ~~in a non-thermal manner~~ from the predetermined portion of the first needle point metal electrode into the air.

Claim 22 (Previously Presented): A negative ion emitting apparatus as in Claim 21 wherein a second needle point metal electrode and a second load resistance section including

carbon is connected to the DC high-voltage power supply section and a common load resistance section is connected to the respective first and second load resistance sections in series with the DC high-voltage power supply section.

Claim 23 (New): The negative ion emitting apparatus of Claim 1,

wherein the air comprises a virtual positive electrode.

Claim 24 (New): The negative ion emitting apparatus of Claim 23,

wherein the load resistance section has an impedance that is higher than the impedance between the virtual positive electrode and the at least one discharge electrode section causing negatively charged electrons to be emitted from the at least one discharge electrode section.

Claim 25 (New): The negative ion emitting method of Claim 17,

wherein the air comprises a virtual positive electrode.

Claim 26 (New): The negative ion emitting method of Claim 25,

wherein the load resistance section has an impedance that is higher than the impedance between the virtual positive electrode and the discharge electrode section causing negatively charged electrons to be emitted from the discharge electrode section.

Claim 27 (New): The negative ion emitting apparatus of Claim 21,

wherein the air comprises a virtual positive electrode.

Claim 28 (New): The negative ion emitting apparatus of Claim 27,

wherein the load resistance section has an impedance that is higher than the impedance between the virtual positive electrode and the predetermined portion of the first needle point metal electrode causing negatively ions to be emitted from the predetermined portion of the first needle point metal electrode.

Claim 29 (New): A negative ion emitting system, comprising:

a direct-current high-voltage power supply section for supplying a source of electrons;

a supply of air;

at least one discharge electrode section connected to the direct-current (DC) high-voltage power supply section for emitting electrons, the discharge electrode section having a proximal end and a distal end, the distal end of the discharge electrode section being exposed to the air, the air operatively functioning as a virtual positive electrode; and

at least one load resistance section arranged between the DC high-voltage power supply section and the discharge electrode section so as to restrict the flow of electrons from the DC high-voltage power supply section to the discharge electrode section until a predetermined voltage is applied,

wherein the discharge electrode section is operatively connected at a proximal end to a load resistance section so that current flows from the DC high-voltage power supply section through the load resistance section to the proximal end of each discharge electrode section causing electrons to be emitted from a distal end of the discharge electrode section into the air, and

wherein the load resistance section has an impedance that is higher than the impedance between the virtual positive electrode and the at least one discharge electrode section causing negatively charged electrons to be emitted from the at least one discharge electrode section.